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A STEP-TWO LECTOTYPIFICATION AND EPITYPIFICATION OF *PENTAPTERYGIUM SIKKIMENSE* W.W. SM. (ERICACEAE) WITH AN AMPLIFIED DESCRIPTION

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ABSTRACT

An epitype is selected for *Pentapterygium sikkimense* W.W. Sm., the basionym of *Agapetes smithiana* Sleumer, to augment the inadvertent lectotypification by Airy Shaw (1959) on a G.A. Gammie collection from Sikkim, India. A step-two lectotypfication on the specimen at Kew is designated here. An amplified description of var. *smithiana* is provided. Photographs of the lectotype, isolectotype, epitype, and live plants are provided to facilitate identification.
KEY WORDS: typification, Sikkim, West Bengal, India.

Pentapterygium sikkimense was described by William Wright Smith (1911 268) based on specimens collected by George Alexander Gammie in 1892 (*1216*, K! [Fig. 1], CAL! [Fig. 2]) from Lachung Valley in the state of Sikkim, and by Charles Gilbert Rogers in 1899 (accession no. 264374, CAL!) from the lower Tonglu region of the Darjeeling Himalaya in the state of West Bengal, India. Sleumer (1939: 106) transferred *P. sikkimense* to *Agapetes* D. Don ex G. Don and proposed a new named, *A. smithiana*, because the Smith epithet was blocked by *A. sikkimensis* Airy Shaw (1935: 29). Years later, in a casual remark made in passing, Airy Shaw (1959: 489) effectively performed a step-one lectotypification of *P. sikkimense* by considering the Gammie collection to the "type." Here we designate the sheet at the Royal Botanic Garden at Kew in a step-two lectotypification. Unfortunately, the lectotype is devoid of floral parts, except for the calyx, and based only on vegetative features this specimen could be confused with *A. interdicta* (Hand.-Mazz.) Sleumer or *A. borii* Airy Shaw. Likewise, *A. smithiana* is subdivided into two varieties, var. *smithiana* with a corolla 10–13 mm long, and var. *major* Airy Shaw (1959: 489) with a corolla 17–21 mm long. Only by consulting Smith original description can one learn that the specimens he examined either had a corolla "1 cm longa" or in some way he knew the corolla was that length. Hence, for the purpose of the precise application of the name an epitype (Art. 9.7, McNeill et al. 2006) is proposed. The epitype (Fig. 3) was obtained during the course of recent field studies in Singalelah National Park, Darjeeling Himalaya, Sikkim, India, when specimens of *Agapetes smithiana* were collected near Chitrey along a rocky slope.

Taxonomic treatment

Agapetes smithiana Sleumer in Bot. Jahrb. Syst. 70: 106. 1939, a new name for *Pentapterygium sikkimense* W.W. Sm. in Rec. Bot. Surv. India 4: 268. 1911. **TYPE: INDIA. Sikkim, North District**: Sikkim Himalaya, Lachung Valley, 7500 ft elev, 14 Sep 1892, *G.A. Gammie 1216*, designated by Airy Shaw in Kew Bull. 13: 489. 1959 (lectotype **[designated here]**: K! [barcode no. K000729429]; isolectotype: CAL! [acc. no. 264376]). Figs. 1, 2. **EPITYPE (designated here)**: **INDIA. West Bengal. Darjeeling District**: Darjeeling Himalaya, Singalila (or Singalelah) National Park, 3 km NW of Chitrey (or Chitre) along Singalila Ridge Trek to Meghma, 2650 m elev, ca 27° 00′ 25″ N, 88° 05′ 25″ E, 11 Dec 2011, *S. Panda* 81 (CAL!). Fig. 3.

Airy Shaw (1959: 489) distinguished *Agapetes smithiana* var. *major*, known from Bhutan, based on differences in the corolla size as may be seen in the key below. Here, for the record, we have amplified the description of var. *smithiana* based on field observation of live plants from Darjeeling Himalaya as well as available herbarium specimens at CAL.

1. Corollas 10–13 mm long, 3.5–4.5 mm in diameter ..... var. ***smithiana***
1. Corollas 17–21 mm long, 6–9 mm in diameter ..... var. ***major***

var. ***smithiana*** (Fig. 4)

Plants usually epiphytic on tree trunks or rarely in rock crevices, 0.1–0.4 m long. **Stems** rigid, terete, lenticellate, sparsely strigose-hispid; branches similar to stems but beset with dense brown strigose-hispidulous to hirtellous hairs (more towards twigs); perulae 3–9, alternate. **Leaves** compactly 2–3-stichous, 2–10 mm apart, coriaceous, subsessile; petioles 1–3 mm long, puberulous; lamina elliptic-obovate to obovate, 12–32 × 6–16 mm, glaucous and green adaxially, glabrous and light green abaxially, serrate with minute teeth to 0.5 mm long, these becoming obscure near basal half, incurved marginally, mucronate to mucronulate apically, cuneate to obtuse basally with one basal pair of glands; venation brochidodromous with 5–8 pairs of lateral veins, these often obscure adaxially but conspicuous and slightly raised abaxially. **Inflorescence** cauline, 1–4-fascicled in a corymb; peduncle 3–5 mm long, sparsely hirtellous with several basal bracts. **Flowers** 13–16 mm long including pedicels with bract and bracteoles; pedicels greenish-pink, sparsely hirtellous, 4–5 mm long; bract 1, basal, 1 × 0.5 mm, ovate-triangular, glabrous, caduceus; bracteoles 2–4, basal to subbasal, persistent in fruit, otherwise like bract. **Calyx** cup-like, winged, light green with pinkish wings, 6–8 × 4 mm, glabrous, accrescent in fruits; lobes 5, basally united, ovate-triangular, 4–5 × 3 mm, glabrous, shortly acuminate apically, entire marginally. **Corolla** greenish-yellow, tubular, 10–13 × 4 mm, 3.5–4.5 mm diam., glabrous; lobes 5, 1 × 0.5 mm, ovate-linear. **Stamens** 10, encircling the pistil, distinct, 8–8.5 mm long; filaments slightly adnate to ovary disc, ca. 1 mm long, greenish-white, glabrous, spathulate, basally dilated; anthers 2-lobed, 7–7.5 mm long incl. tubules 4–5 mm long, granular with a minute tail. **Pistil** ca. 12 mm long; ovary syncarpous, 5-locular, ca. 4 × 3.5 mm, glabrous; ovules several in each locule on axile placentation; style slender, 8 mm long with 3–4 longitudinal ridges, glabrous; stigma simple, truncate apically. **Fruit** a berry, ovoid, 12–16 × 10–12 mm, light green (immature) to white (mature), glabrous, with an accrescent, winged calyx. **Seeds** numerous, ca. 1 mm long, obconical, scarious.

Distribution. Endemic to the eastern Himalaya of India (Sikkim and Darjeeling), eastern Nepal, and eastern Bhutan (Mongar and Deothang districts; fide Long and Rae 1991: 402).

Habitat. This species is extremely rare and threatened in subtropical-temperate forests at an altitude of about 2300–2650 m, associated with *Gaultheria stapfiana* Airy Shaw, *Rhododendron* spp., and *Vaccinium retusum* (Griff.) C.B. Clarke of Ericaceae as well as with *Quercus* spp. (Fagaceae).

Flowering. April–early September; December. **Fruiting**. July–August; December–January.

Figure 1. Lectotype of *Pentapterygium sikkimense* W.W. Sm. (K).

Figure 2. Isolectotype of *Pentapterygium sikkimense* W.W. Sm.

Figure 3. Epitype of *Pentapterygium sikkimense W.W. Sm.*

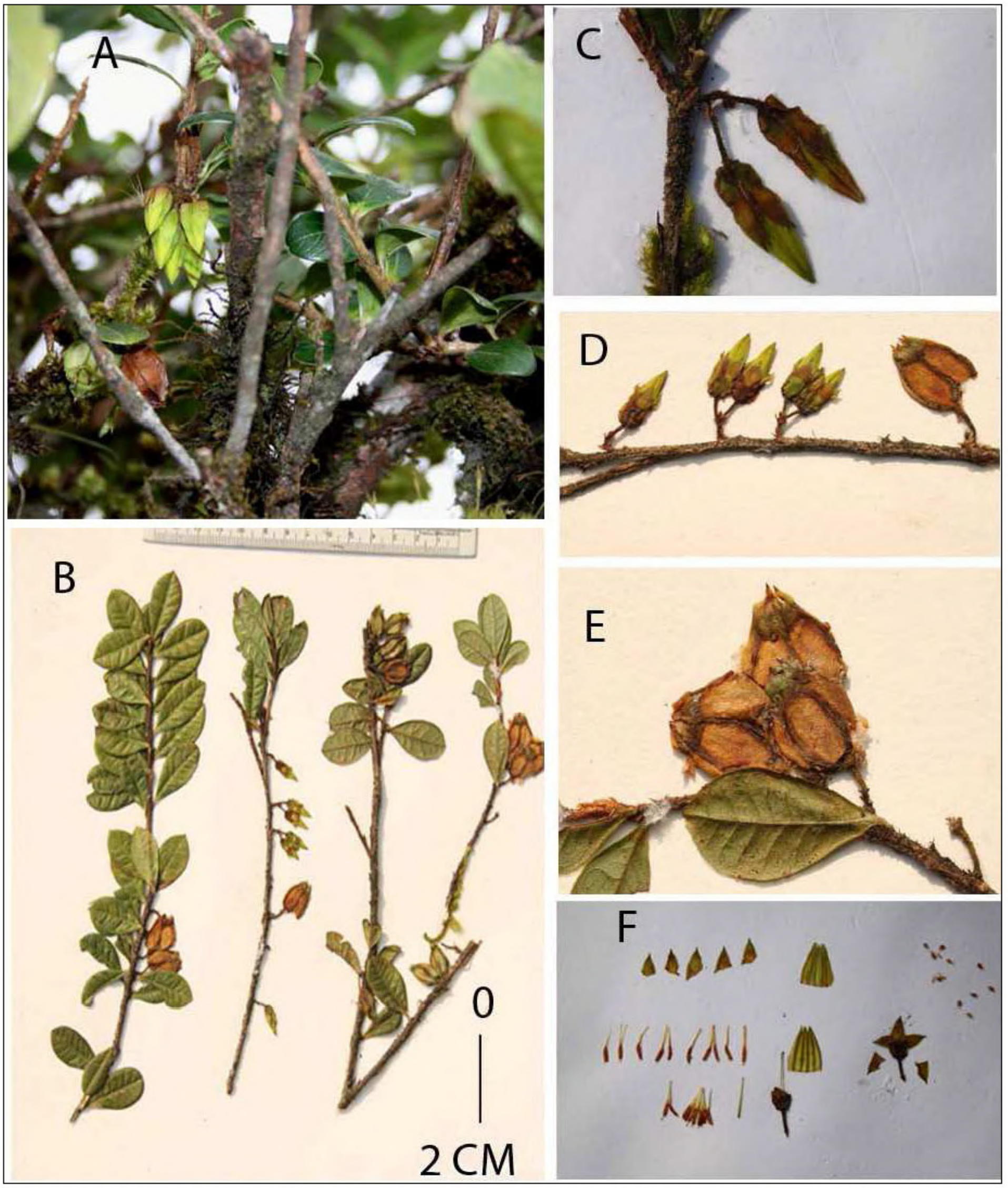

Figure 4. *Agapetes smithiana* Sleumer var. *smithiana*. A. Habit. B. Flowering and fruiting twigs. C-D. Inflorescence. E. Fruits. F. Floral parts. All from *S. Panda 81* (CAL), as also shown in Fig. 3.

Additional specimens examined: **INDIA**. **Sikkim:** Chitrey to Uttarey, 18 May 2002, *P. Singh* 24981 (BSHC: fl. buds); Damthang, 7000–8000 ft elev, Feb 2004, *A.K. Sahu* 26669 (BSHC: fl.). **Darjeeling:** below Tonglu at Dilpa, 8300 ft elev, 2 Apr 1975, *D. Chamberlain* 49 (DD: fl).

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